

MODULE 8
OBJECTIVES

Upon completion of this module, the trainee, without the aid of references will be able to:

1. Describe the postmortem authority of the food inspector and the veterinarian.
2. Describe the lighting requirements at the postmortem inspection stations.
3. List the categories on FSIS Form 6000-16 (lot tally sheet) and give the criteria applicable to each category for postmortem condemnation.
4. List five symptoms of septicemia.
5. List seven causes for liver condemnation.
6. List the disposition of kidneys after inspection.
7. List the criteria for condemnation of a carcass part related to fractures.
8. List the criteria for condemnation of a carcass part related to luxations .
9. List the establishment responsibilities in conducting salvaging operations.
10. List the requirements the establishment must meet to salvage birds with airsacculitis.
11. List the requirements the establishment must meet to salvage birds that are contaminated.
12. Given a copy of a completed FSIS Form 6000-16 in a single lot, execute and indicate distribution of the following reports.
 - a. FSIS Form 6000-16
 - b. FSIS Form 9061-2
 - c. FSIS Form 6000-21
 - d. FSIS Form 6510-7

RATITE POSTMORTEM INSPECTION

December, 1995

MODULE 8 SCRIPT

Carcass Disposition

Introduction

A thorough inspection must be made on each carcass presented for postmortem inspection. Food inspectors, working under the supervision of the veterinarian, use approved methods for performing postmortem inspection.

The food inspector passes the wholesome, condemns the unwholesome, and retains the questionable for veterinary review. The veterinarian is responsible for uniform dispositions made on carcasses presented to food inspectors under the veterinarian's supervision.

The postmortem inspector must make a decision about the wholesomeness of each carcass inspected. If the carcass is wholesome, it is allowed to continue down the line.

If the carcass is wholesome except for some localized disease condition, it is allowed to continue unrestricted after removal of the affected areas. The diseased portion that was removed is handled the same as any other condemned material. If the carcass is considered unwholesome, the entire carcass is condemned.

Some factors that must be considered are: At the time of slaughter, is there evidence that the disease process is being resolved? Or, that it is remaining

The final consideration for carcass disposition involves questionable carcasses that require further examination. Borderline or questionable carcasses are retained pending further review. The carcass will be condemned, passed, or passed after removal of diseased tissue.

When the inspector is either undecided about the proper disposition of a carcass or has determined that the entire carcass might have to be condemned, the carcass will be retained. The veterinarian can then review the carcass before making a final disposition. The veterinarian will make the final disposition when an entire carcass is to be condemned.

The philosophy of carcass disposition is based on the interpretation of an interrupted disease process. Dispositions are made on carcasses based on the stage of disease development and the resolution of the disease or processes at the time of slaughter. If a disease process exists in the live animal, the pathogenesis of the disease stops at the time of slaughter, but the lesions of the disease will remain. Our responsibility is to evaluate and interpret the pathological lesions present after the animal is slaughtered and prepared for postmortem inspection.

about the same? Or, has it developed into an irreversible stage? If it is being resolved, it will show evidence of healing; for example, connective tissue walling off

RATITE POSTMORTEM INSPECTION

December, 1995

lesions, minimal evidence of inflammation, and a return to functional activity of the tissues.

In chronic conditions, there are areas of active inflammation, areas of inactivity, or areas of connective tissue representing a granulomatous reaction. Some function exists in the affected tissues. The lesions of the irreversible stage of an interrupted disease process represent extensive degeneration of parenchymatous organs. Classical signs of septicemia/toxemia (systemic change) are present. The animal would not have recovered from the disease if allowed to live.

If systemic involvement is determined to be present in the disease process, the carcass is unwholesome and shall be condemned. If only a part or a localized area of the carcass is affected, the remainder can be accepted as wholesome after removal of the affected unwholesome portion of the carcass.

Postmortem Inspection Procedures

At postmortem inspection, the inspector will inspect all surfaces of each carcass, both internal and external. Always look at the carcass and its parts in their entirety. Check the general appearance, color, and character of the carcass as a whole.

Inspection of carcass parts and visceral organs requires observation, palpation or both. After the heart is incised through the interventricular septum, it is observed and palpated. After removal from the carcass, the lungs, liver, spleen, and kidneys are observed and palpated. The Birds with TB develop a wasting condition characterized by loss of weight and

neck, trachea, esophagus, head, eyes, sinus openings, kidneys (in situ), and all other visceral organs are observed.

There are some abnormalities that exist within the tissues of a carcass and its organs that are more easily detected by palpation than observation (i.e., deep-seated abscess in the liver). When palpating an organ, the most effective technique requires firm application with the fingers and the palm of the hand over the entire organ.

Carcasses and parts might also exhibit abnormal, offensive odors such as necrotic, medicinal, and chemical residue odors.

Again, plant management must provide trained, competent personnel to assist the inspector, as required, to properly inspect a carcass and its parts.

A minimum of 100 foot candles of light with a color rendering index of 85 is required at all inspection stations.

FSIS Form 6000-16 Condemn Categories**Tuberculosis**

Condemnation criteria: One identifiable lesion.

Avian tuberculosis is caused by the bacterium *Mycobacterium avium* and usually is a chronic slowly developing disease. It has largely been eradicated in domestic poultry in the U.S. but is still found occasionally in mature birds.

diarrhea. At postmortem examination, their carcasses are typically emaciated.

RATITE POSTMORTEM INSPECTION

December, 1995

Gray to yellow, firm nodules (tubercles) are often scattered along the intestines and can be found in various organs, especially the liver and spleen. Lungs generally have no gross lesions although, in advanced cases, any organ or tissue can be involved.

Avian tuberculosis can infect humans but is not considered to be a serious threat to people with healthy immune systems.

One definitive lesion is all that is required to condemn a ratite carcass for tuberculosis.

Leukosis

Condemnation criteria: One identifiable lesion.

This condemn category includes several neoplastic diseases caused by various viruses. All produce tumors in domestic poultry and present similar gross lesions.

The age and species of bird affected by leukotic tumors suggests which viral agent is involved. However, only a presumptive diagnosis can be made based on this information since there is considerable overlap.

The most common manifestations of the leukosis complex are: (1) Marek's disease, which is an important disease only in young chickens less than six months of age; (2) lymphoid leukosis, most common in semimature and mature chickens; (3) reticuloendotheliosis, which occasionally produces liver and spleen tumors in turkeys and, rarely, runt disease in chickens; and (4) Septicemia is manifested by a group of

lymphoproliferative disease, which affects turkeys, producing a greatly enlarged spleen as well as tumors in other organs. There is no evidence that viruses of the leukosis complex are pathogenic for humans.

One definitive lesion in a ratite or domestic poultry is all that is needed to justify condemnation of the carcass. Definitive means a lesion that can be defended grossly as a lesion of leukosis.

Septicemia and Toxemia

Condemnation criteria: Systemic change.

Septicemia is a disease state caused by pathogenic (disease producing) microorganisms in the blood that have produced systemic change within the bird. Systemic change affects the body as a whole rather than localized portions.

In septicemia, the physiologic (normal) functions of the birds interdependent organ systems are disrupted. The cells of the body are deprived of adequate maintenance to support normal function and they deteriorate. This deterioration may be very rapid when highly virulent microorganisms are the cause, or it can be more gradual if less virulent ones are involved.

In some cases, the physiologic compromise produced by the septicemia will overwhelm the bird and result in its death. In other cases, the bird's immune system will overcome the causative organism before irreversible damage occurs and recovery will take place.

signs, not all of which will be present in a

RATITE POSTMORTEM INSPECTION

December, 1995

single carcass. Therefore, judgment plays an important part in correct dispositions for this condemn category.

Septicemic carcasses frequently have petechial (pinpoint) hemorrhages on the heart, liver, kidneys, muscles, and serous membranes. Blood-tinged exudates are often present in the body cavity. The liver and spleen are often swollen and hyperemic (contain an excess of blood) since they remove most of the bacteria from the circulating blood. Kidneys may appear swollen and congested.

The skin of septic birds may be hyperemic since vascular paralysis results in blood filled dermal capillaries.

Rapid onset of muscle wasting follows sepsis. Some of this is caused by anorexia (loss of appetite), but most skeletal muscle breakdown is the result of changes in muscle metabolism that triggers protein degradation.

Depending on the cause and duration of septicemia, carcasses at the time of slaughter may be hyperemic, cyanotic, anemic, dehydrated, edematous or exhibit some combination of these signs. No single carcass will show all of these signs.

Toxemia, the intoxication or poisoning of a bird caused by the absorption of toxins produced by infective organisms, shows signs similar to those of septicemia. Frequently, both conditions exist simultaneously.

Septicemia/toxemia is commonly referred to as sep/tox. If a carcass shows systemic change, it is condemned. This

category is a catch-all for those carcasses that have septicemia, toxemia, or a combination of septicemia-toxemia.

Synovitis

Condemnation criteria: Synovitis in any joint with systemic change in the carcass.

Synovitis may be caused by a number of organisms, most often members of the genus *Mycoplasma*. Injury and nutritional deficiencies can also lead to synovitis. The result is acute or chronic inflammation of the membranes lining one or more joints and tendon sheaths.

These structures are often noticeably swollen and may contain exudate of variable amounts and consistency. The liver, kidneys, and spleen might be swollen, and the liver is sometimes stained green from bile stasis. Lesions vary depending upon whether or not the condition has been confined to the joints without affecting the overall health of the bird or has overwhelmed the bird's defense mechanisms and caused systemic changes.

A carcass that has synovitis and also shows signs of sep/tox or systemic change is condemned. In other words, a carcass with synovitis is not condemned unless it also shows systemic change.

Tumors

Condemnation criteria: Metastasis or a tumor that has caused a systemic change.

If there is evidence that the general condition of the bird has been adversely

RATITE POSTMORTEM INSPECTION

December, 1995

affected by the size, position, or nature of a neoplasm, the entire carcass shall be condemned.

Condemn a carcass if there is gross evidence of metastasis present. The general rule is: one tumor -- trim and pass; two or more tumors -- condemn if there is evidence of metastasis. Exclude leukosis from the tumor category. Leukosis is in a separate category.

Bruises

Condemnation criteria: Bruising of the entire carcass or bruising with systemic change.

If the entire carcass is affected as a result of a bruise, the entire carcass shall be condemned.

If bruises are the reason for systemic change in a carcass, then the carcass is condemned and recorded under the bruise category.

Cadaver

Condemnation criteria: Died from something other than slaughter.

Birds that die from causes other than slaughter are condemned under the cadaver category.

Contamination

Condemnation criteria: Reconditioning is prohibited, or the carcass is contaminated to the extent that a valid inspection cannot be made.

Carcasses that are contaminated to the

extent that a valid inspection cannot be made are condemned. An example would be a carcass contaminated with bile or feces to the extent that the inspector cannot determine whether the carcass is wholesome. Also, carcasses that fall into open floor drains or water from stopped up drains are condemned under the contamination category.

Overscald

Scalding and singeing are not used to assist in feather removal of ratites. Therefore, this category does not apply to ratites.

Airsacculitis

Condemnation criteria: Extensive airsacculitis or airsacculitis with systemic change.

Airsacculitis, inflammation of the air sacs, can be produced by numerous microorganisms. Often, more than one infectious agent is identified in an outbreak. Members of the genus *Mycoplasma* are frequently involved. Birds are more susceptible to infections of the air sacs when they are under stress. Vaccinations, other diseases, poor nutrition, unsanitary conditions, and poor environmental conditions can all be contributing factors.

The lesions of airsacculitis can be acute or chronic. Their appearance can range from slight clouding of air sac membranes and small amounts of watery exudate to thickened, opaque membranes and large amounts of thick, white-to-cream colored and/or cheesy exudates. The exudates

RATITE POSTMORTEM INSPECTION

December, 1995

may be confined to the air sacs , or they may be found in other areas if the air sac Pneumonia, pericarditis, and perihepatitis may be present. In some cases, all portions of the respiratory tract (nasal passages, sinuses, trachea, bronchi, lungs and air sacs) may be affected. In other cases, little involvement beyond the air sacs is evident. Systemic change occurs if the bird s defense mechanisms are unable to confine the infection to a localized condition of the respiratory system.

One organism that can cause airsacculitis in birds, *Chlamydia psittaci*, is also capable of causing disease in humans. Fortunately, outbreaks of this disease are sporadic and generally occur in turkeys. The turkey industry watches for any evidence of chlamydiosis so infected flocks generally are identified and treated before slaughter. However, VMOs must stay alert for any poultry that may show signs suspicious for this disease.

Carcasses are condemned if airsacculitis occurs in conjunction with systemic change. An airsacculitis condemnation is also justified by the presence of extensive airsacculitis. In the latter instance, the amount of exudate present prevents a valid evaluation of the carcass. If the exudate cannot be effectively removed, the carcass is also condemned.

Other

In the other category there are several subgroups. For example:

Inflammatory Process

Only partial condemnation of the carcass

membranes are ruptured.

If the condition is of a generalized nature, the carcass is condemned.

No viscera

Carcasses condemned because there is not a viscera to inspect. Disposition of no-viscera carcasses is determined by the veterinarian in charge and is based upon flock incidence of disease.

Plant Rejects

If the plant elects to reject a carcass for inspection, it is condemned.

Remarks

Carcasses condemned for reasons other than those listed above may be recorded under Remarks , examples: parasites, anthrax.

Special surveys

Special surveys may be requested relating to condemnations. The information concerning the data to collect and code to use will be supplied when the survey is requested.

Parts Disposition**Introduction**

is required in the case of some localized

RATITE POSTMORTEM INSPECTION

December, 1995

conditions. If there is an unwholesome portion or affected part of a carcass due to a localized condition that can be effectively removed, the remainder of the carcass would be considered wholesome.

Deemed localized means either by established policy ... or scientific fact.

Some organs or parts that may be condemned because of localized conditions without condemning the whole carcass are:

Livers

Livers that have fatty degeneration are condemned. Livers that have extensive petechia or hemorrhaging must be condemned. A liver that is inflamed, has an abscess, has a necrotic area, or is affected with necrosis, is condemned. Cirrhotic livers, livers that have a single tumor, or livers with cysts are also condemned. Discolorations in the liver, such as in a biliary system disorder or postmortem changes in color, result in the liver being condemned.

For specific disease conditions like enterohepatitis, the livers are condemned. Livers are condemned if there has been contamination from intestinal content or noxious materials.

Kidneys

All ratite kidneys are to be condemned following inspection. The kidneys are assumed to concentrate heavy metals within their tissues.

Fractures

A fracture with no associated hemorrhage

need not be trimmed and can be passed.

But a fracture with a hemorrhage of the affected part must be trimmed. A compound fracture, one in which the skin is broken, requires trimming whether there is hemorrhaging present or not.

Luxations

A luxation is a simple disjointment with no skin broken and no hemorrhage. The condition need not be trimmed. Hemorrhaging extending into the musculature requires trimming or slitting and washing out. Simple redness of the skin does not require action.

Salvaging Procedures**Introduction**

A carcass that the establishment elects not to salvage shall be condemned and recorded as a plant reject.

The establishment must comply with established procedures and facility requirements, have competent personnel, and consistently conduct operations in a sanitary manner. Otherwise, the approval for such operations will be suspended. Salvage operations are privileges, not substitutes for hygienic evisceration techniques.

Airsacculitis Salvage

Birds with airsacculitis, except those with extensive airsacculitis or that are septic, may be offered for salvage. All exudate and all affected air sacs, organs, and other tissues must be removed and condemned. The establishment must

8.10
RATITE POSTMORTEM INSPECTION

December, 1995

submit a written procedure for airsacculitis salvage for approval by the circuit supervisor.

Contamination Salvage

Except as prohibited, birds that have inadvertently become contaminated with ingesta, feces, or other foreign material may be offered for salvage. Removal of the contamination by trimming is the

only method permitted. Washing contamination from the carcass or parts is not permitted. The establishment must submit a written procedure for contamination salvage for approval by the area supervisor.

MODULE 8
SUPPLEMENT

Using the script as the reference, complete the following:

1. A thorough inspection must be made on _____ carcass presented for postmortem inspection.
2. Food inspectors working under the supervision of the veterinarian use _____ for performing postmortem inspection.
3. The food inspector _____ the wholesome, _____ the unwholesome and _____ the questionable for veterinary review.
4. The veterinarian will make the final disposition when an _____ carcass is to be condemned.
5. A minimum of _____ foot candles of light with a color rendering index of _____ is required at all inspection stations.
6. List the condemnation criteria for each condemn category on FSIS Form 6000-16.
 - a. Tuberculosis:
 - b. Leukosis:
 - c. Septicemia and Toxemia:
 - d. Synovitis:
 - e. Tumors:
 - f. Bruises:
 - g. Cadaver:
 - h. Contamination:
 - i. Overscald:

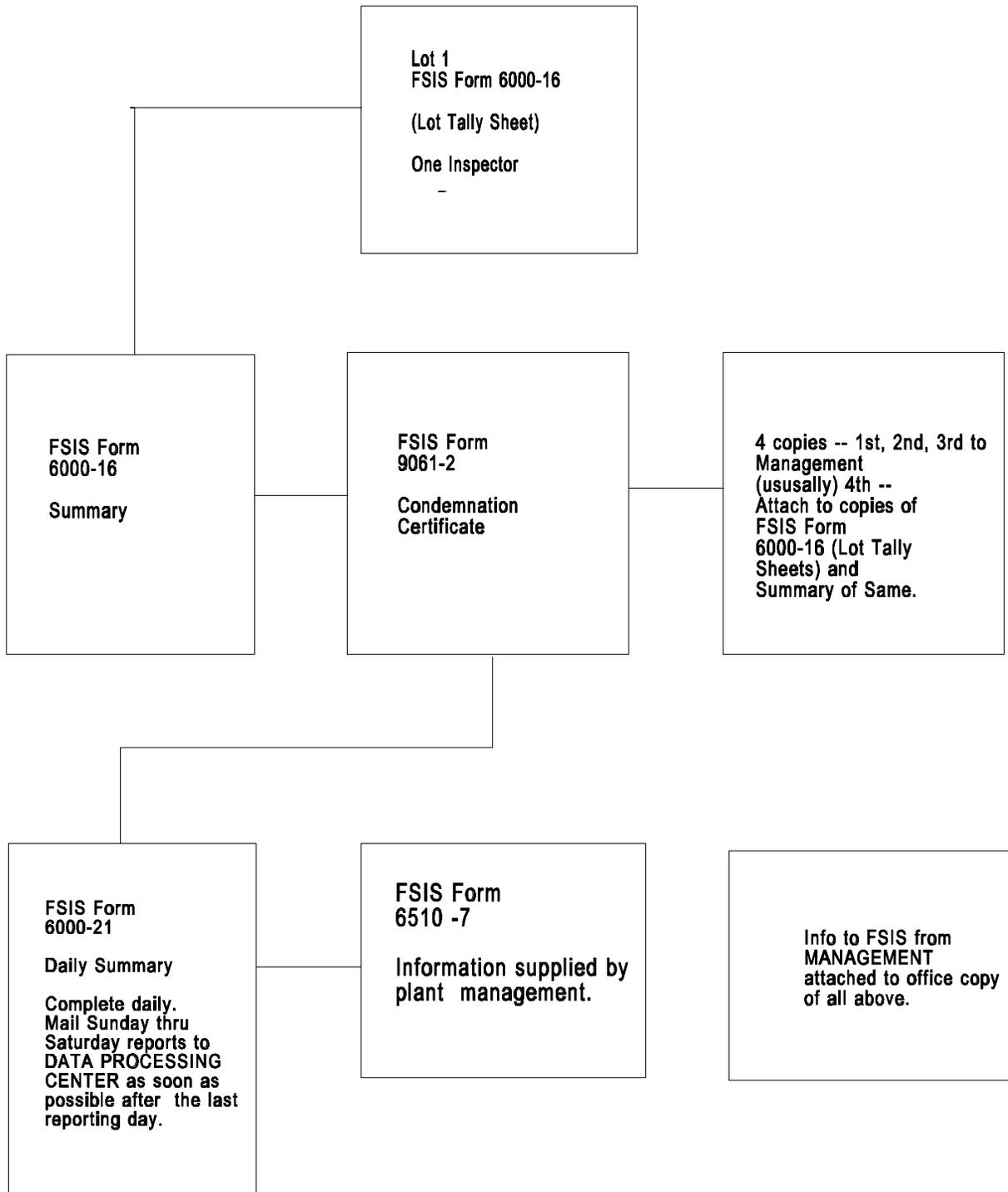
- j. Airsacculitis:
 - k. Inflammatory Process (IP):
 - l. No Viscera (NV):
 - j. Plant Reject (PR):
7. List five symptoms of septicemia.
- a.
 - b.
 - c.
 - d.
 - e.
8. List seven causes for liver condemnation.
- a.
 - b.
 - c.
 - d.
 - e.
 - f.
 - g.
9. All kidneys shall be _____ following inspection.
10. A fracture with a hemorrhage of the affected part must be _____ .
A compound fracture requires _____ whether there is
hemorrhaging or not.

11. A simple luxation need _____ be trimmed. Hemorrhaging extending into the musculature requires trimming or _____ and washing out.
12. While performing salvaging procedures, the establishment must comply with _____ procedures and facility requirements, have _____ personnel, and _____ conduct operations in a sanitary manner.
13. When salvaging because of airsacculitis, _____ exudate and all _____ air sacs, organs and other tissues must be removed and _____.
14. When salvaging because of contamination, removal of the contamination by _____ is the only method permitted.
15. The flow chart and forms on the following pages may be used as a guide to complete required reports. The forms completion example starts with the second lot of the day.

FLOW CHART FOR POSTMORTEM REPORTS

Example for a Plant with 1 Line Inspector

8.15
RATITE POSTMORTEM INSPECTION
December, 1995



RATITE POSTMORTEM INSPECTION

December, 1995

8.17

RATITE POSTMORTEM INSPECTION

December, 1995

RATITE POSTMORTEM INSPECTION

December, 1995

RATITE POSTMORTEM INSPECTION

December, 1995

8.20

RATITE POSTMORTEM INSPECTION

December, 1995

8.21
RATITE POSTMORTEM INSPECTION
December, 1995